

Patent Claims:

1. A method for production of moldings for switching devices for low-voltage, medium-voltage and high-voltage,

characterized

in that a mixture of balls with a predetermined distribution of diameters of size Dx is introduced into the encapsulation compound thus creating direct encapsulation of components.

2. A method for production of moldings for switching devices for low-voltage, medium-voltage and high-voltage, in particular as claimed in claim 1,

characterized

in that a mixture of hollow balls with a predetermined distribution of external diameters of size Dx is introduced into the encapsulation compound.

3. A method for production of switching devices for low-voltage, medium-voltage and high-voltage, in particular as claimed in claim 1 and/or 2,

characterized

in that at least one switching chamber is provided with a cast surround composed of a first encapsulation compound, and is then encapsulated together with connections into a block composed of at least one second encapsulation compound such as silicone, soft epoxy or plastics.

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4. The method as claimed in claim 1, 2 or 3,

characterized

in that epoxy resin is used as the first encapsulation compound, and silicone, polyurethane or a polyurethane derivative is used as the second encapsulation compound.

5. The method as claimed in claim 4,

characterized

in that the particles are introduced into the first and/or into the second encapsulation compound.

5 6. The method as claimed in one of the preceding claims,

characterized

in that the balls or the hollow balls are composed of glass.

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7. The method as claimed in claim 1, 2 or 3,

characterized

in that the balls or the hollow balls are composed of ceramic, preferably of aluminum nitride.

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8. The method as claimed in one of the preceding claims,

characterized

in that the filling level is set to be between 50 and 20 90%.

9. The method as claimed in one of the preceding claims,

characterized

25 in that other fillers in the form of small particles are mixed with the ball and/or hollow ball mixture.

10. The method as claimed in one of the preceding claims,

30 **characterized**

in that the other fillers are quartz powder or synthetic silica flour.

11. The method as claimed in one of the preceding 35 claims,

characterized

in that the external diameters of the balls or hollow balls or particles have a bandwidth of 0.01 mm to

10 mm.

12. The method as claimed in one of the preceding claims,

5 **characterized**

in that the balls, hollow balls or particles have a mean density of 0.2 g/cm³.

13. The method as claimed in one of the preceding 10 claims,

characterized

in that the balls, hollow balls or particles have a mean density of 0.37 g/cm³.

15 14. The method as claimed in one of the preceding claims,

characterized

in that the hollow balls have a diameter of up to 200 micrometers.

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15. The method as claimed in one of the preceding claims,

characterized

in that the hollow balls have an effective density 25 between 0.1 and 0.6 g/cm³.

16. The method as claimed in one of the preceding claims,

characterized

30 in that the solid balls have a density between 2.0 and 7.0 g/cm³.

17. A switching device for low-voltage, medium-voltage and high-voltage, having encapsulated moldings,

35 **characterized**

in that a mixture of balls and/or hollow balls and/or particles with a predetermined distribution of diameters of size D_x is introduced into the first

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encapsulation compound thus creating direct encapsulation of moldings, and the moldings of a switching device are composed of electrically insulating materials.

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18. A switching device for low-voltage, medium-voltage and high-voltage, having encapsulated moldings, **characterized**

10 in that the second encapsulation compound in which the moldings with cast surrounds are inserted and/or are once again encapsulated in this way is composed of electrically insulating materials, such as silicone, epoxy resin or polyurethane.

15 19. The switching device as claimed in claim 17 or 18, **characterized**

20 in that at least one switching chamber is provided with a cast surround composed of a first encapsulation compound, and is then encapsulated together with connections into a block composed of at least one second encapsulation compound such as silicone, soft epoxy or plastics.

25 20. The switching device as claimed in one of claims 17 to 19,

characterized

30 in that epoxy resin is used as the first encapsulation compound, and silicone, polyurethane or a polyurethane derivative is used as the second encapsulation compound.

21. The switching device as claimed in claim 20, **characterized**

35 in that said particles or balls are introduced into the first and/or into the second encapsulation compound.

22. The switching device as claimed in claim 21, **characterized**

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in that the balls or hollow balls are composed of glass or ceramic.

23. The switching device as claimed in one of claims
5 17 to 22,

characterized

in that the balls or hollow balls are composed of aluminum-nitride ceramic.

10 24. The switching device as claimed in one of the preceding claims 17 to 22,

characterized

in that the moldings or components of a switching device for each phase of a three-phase supply are each
15 encapsulated to form a sealed block.

25. The switching device as claimed in claim 24,

characterized

in that the respective block is provided with heat-
20 dissipating connection elements (2).